Notes ID: 1BC10F044075747C8525786900563012

From: "Mackay, Joseph B NAE" <Joseph.B.Mackay@usace.army.mil>

To: Dave Dickerson/R1/USEPA/US@EPA

Delivered Date: 03/03/2008 04:13 PM EDT

Subject: RE: New Action Item, FW: tech. evaluations re. CAD cells

Dave - I save the more pertinent stuff.

I am leaving for Florida this Thursday, the day of the meeting.

Jay

-----Original Message-----
From: dickerson.dave@epamail.epa.gov [mailto:dickerson.dave@epamail.epa.gov]
Sent: Monday, March 03, 2008 4:09 PM
To: Mackay, Joseph B NAE
Subject: RE: New Action Item, FW: tech. evaluations re. CAD cells

thanks Jay - this is helpful. Pretty scary though that you had ENSR's old email!!

I thought you were off to Florida?

Dave

"Mackay, Joseph B NAE" <Joseph.B.Mackay@usace.army.mil> 03/03/2008 03:42 PM

To: Dave Dickerson/R1/USEPA/US@EPA

cc: "Leitch, Robert A NAE" <Robert.A.Leitch@usace.army.mil>, "Mitkevicius, K C NAE" <K.C.Mitkevicius@usace.army.mil>

Subject: RE: New Action Item, FW: tech. evaluations re. CAD cells

Dave:

For what its worth - Per your item 2 below, Com-Electric cable relocation comes to mind. If you recall, sheet pile enclosures were used to contain contaminated sediments during the dredging of the power line reloctaion. I
can't remember exactly but I believe the way we initially tried to get a handle on potential impacts was that Skip Nelson ran some calculations using assumptions regarding sediment concentrations in the area of dredging/excavation to determine a worst case scenario assuming all would be released and then we kind of worked backwards from there to asses the potential risk to water quality and contaminant transport. Perhaps that would be a way to estimate losses of PCBs per your #2 below and it was a fairly simple exercise. If you recall after the sheet piles were in place we implemented the water quality monitoring which included toxicity testing since the concern was not only for the PCBs but from the "soup" of co-located contaminants (dissolved and particulate) released from the sediments during the excavation and then depositing them adjacent to the excavation (mimicking disposal into a CAD cell) that could potentially prove worse from a toxicity standpoint to the adjacent areas. The sheet pile did separate at one point and I think when it did we had some elevated turbidities. Our problems occurred primarily when equipment was being moved in the shallows. Also- to determine when it was ok to remove the sheetpile wall we ran some toxicity tests on water collected from within the enclosure as a worst case scenario. We saw no toxicity so we knew it was then safe to take the piles out.

I copied this from an e-mail way back from ENSR who performed the monitoring -

"Com-Electric Monitoring:

Results: The monitoring showed that the containment provided by a sheet pile cofferdam was effective in limiting water quality impacts. Down current turbidity levels were unaffected or slightly elevated (10-20 NTU) above background conditions during most aspects of construction. However, exceedence(s) of the turbidity criteria were noted on three occasions associated with dredging outside of controls and vessel movement. The real-time monitoring was able to relate these turbidity violations to specific operational conditions/activities and prompt corrective action was taken to limit impacts. Water column chemistry indicated that there were slight increases in the concentrations of total lead, copper and dissolved PCBs with limited increases in turbidity at 300 ft. The biological testing verified that there were no acute impacts associated with the construction. In summary, this monitoring event showed that real-time turbidity monitoring with an established criteria of 50 NTU above background combined with toxicity testing provided a conservative and effective mechanism to limit construction impacts to the water column."

Hope this helps -

Jay

-----Original Message-----
From: Leitch, Robert A NAE
Sent: Thursday, February 28, 2008 4:06 PM
To: dickerson.dave@epamail.epa.gov
Cc: Mitkevicius, K C NAE; Beaudoin, Maurice NAE; L'Heureux, Paul G NAE
Subject: RE: tech. evaluations re. CAD cells

Dave:

I will work with KC and others here at the USACE to develop some ideas and will get back to you the first of next week.

Tx

Bob

-----Original Message-----
From: dickerson.dave@epamail.epa.gov
[mailto:dickerson.dave@epamail.epa.gov]
Sent: Wednesday, February 27, 2008 3:34 PM
To: Mitkevicius, K C NAE; Beaudoin, Maurice NAE; Leitch, Robert A NAE; L'Heureux, Paul G NAE
Subject: tech. evaluations re. CAD cells

Hi - as I discussed with KC the other day, EPA is looking for tech. assitance re. evaluating CAD cell use for the harbor cleanup. At this point, the two issues that I see as needing modeling or some other kind of evalutation are:

1. Long term potential losses of PCBs from the CAD cells due to groundwater upwelling in and around the CAD cells to the river bottom.
I don't necessarily think this will be a significant issue (since the placed dredged material will likely be much more impermeable then the surrounding sand and gravel, especially over time with consolidation of the dredged material), but its just something that we have to evaluate and try to quantify. I think the conceptual model will be: pore water with PCBs gets "squeezed" out of the side walls and bottom of the CAD, and then gets picked up by the surrounding upwelling GW to the organic silts of the river bed. There the organic silts will likely further sequester PCBs prior to any further transport to the mudline/biological layer as well as the water column. Perhaps some GW also travels directly through the CAD??

2. Losses of PCBs during placement into the CAD cells. Since we will be proposing a full perimeter sheetpile wall for the upper harbor CAD, and use of silt curtains for the lower harbor CAD, this shouldn't be a big issue

either. But again, its something we need to try and quantify for the record. PCB losses potentially could take place via the "doors" in the sheetpile or curtain wall, or via "leakage" between the piles (they won't be completely water tight, correct?) or through the curtains.

The timeframe we're shooting for is to have this work finalized by say 5/1/09. That way we could incorporate the information into the FS by its due date of 7/1/09. In terms of contractual support, I wonder if Apex personnel might have been involved with the GW work that was done for CDF C, which might be tweaked for use with the upper harbor CAD. On the other hand, maybe some of the Corps' modeling expertise out of Vicksburg could be utilized. It would also make sense to discuss this with Tom Fredette or others at the Corps (Jay Mackay??) that were involved in siting the Boston or Providence CAD cells. I'm open to suggestion, provided that we can meet the schedule.

At any rate, this is just to start the conversation and get the ball rolling. KC and I thought that maybe we should have JE take a look at this issue and get back to us as to whether they or their subs could help out. Please let me know if you have any other thoughts.

Thanks - Dave

(See attached file: aerial1.jpg)(See attached file: pic11collapse.jpg) (See attached file: pict4.jpg)